

ABSTRACT OF THE INVENTION

Provided is a steel alloy and process for manufacture thereof. The steel alloy has improved ductility, weldability and dimensional stability. Also provided is a manufacturing mold having a manifold that may be formed of the steel alloy. The manifold may include sprues or runners such that the manifold may be used in plastic injection mold. The steel alloy has the chemical composition comprised of (by weight percent) about .16-.2 carbon, about .6-.9 manganese, up to about .02 phosphorous, up to about .02 sulfur, about .25-.45 silicon, about 2.3-2.7 chromium, up to about .2 nickel, up to about .15 copper, up to about .15 molybdenum, about .15-.03 aluminum and the balance being iron with trace amounts of ordinarily present elements. The steel alloy is electric furnace melted, ladle refined, vacuum degassed and argon shield poured in order to ensure cleanliness and quality.